



STATEMENT OF BASIS
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BAQ Engineering Services Division

Company Name:	OWT Industries, Inc.	Permit Writer:	Michael Robertson
Permit Number:	0200-0235-CA	Date:	DRAFT

EXPEDITED REVIEW

DATE APPLICATION RECEIVED: Expedited request received on August 13, 2015 and accepted into the expedited program on August 19, 2015.

FACILITY DESCRIPTION OWT Industries, Inc. (OWT Industries) is an assembly and testing facility for hand-held lawn equipment (LC) pressure washers (PW), and small portable generators (PG) with supporting equipment in Anderson, SC.

Assembly and Audit - Pressure Washers & Portable Generators (PRIME):

The assembly and audit process will consist of eight assembly lines and three audit stations. Each assembly line has the capability of assembling and testing either pressure washers or small portable power generators. The units are equipped with small 4-cycle gasoline engines with a size up to 13.3 hp (9.92 kW). The audit stations include two small enclosed booths for testing. Engine sizes with a maximum power rating from 4.4 to 13.3 hp are assembled and undergo routine engine testing and appropriate quality checks for a maximum total of three and five minutes. Each tested engine burns unleaded gasoline. The gasoline used for testing is stored in the 500gallon storage tank and/or 55-gallon drums.

Reconditioning - Pressure Washers & Portable Generators:

Recondition pressure washers and portable generators are received at the facility as product returns. Each unit is equipped with a small 4-cycle gasoline engine with a size up to 13.3 hp (9.92 kW). It will consist of a total of ten test stations: the six test stations relocated from the Pickens facility plus an additional four new test stations. Of the ten total stations, eight will be configured with water hookups specifically for Pressure Washer testing, and two will be configured with electrical hookups specifically for Portable Generator testing. All stations are setup for the testing of the gasoline fueled engines for a maximum of 5 minutes. The gasoline used for testing will be stored in the relocated 500-gallon storage tank and/or 55-gallon drums. Waste fuel removed from these units will be collected in an enclosed 5 gallon container for disposal. Small quantities of chemicals are used for cleaning in this process area.

Reconditioning - Lawn Care:

Reconditioning process consists of two test areas: Pre-analysis and Final Reconditioning. The pre-analysis area receives returns of hand-held outdoor lawn and garden equipment with engine size up to 2.5 hp (1.9 kW). Each tested engine will fire unleaded gasoline that is mixed with a 2-cycle oil at a 50:1 ratio. The product returns are disassembled and prepared for cleaning in closed-top washers. The cleaning agents used are primarily alkaline cleaners. Returned products requiring minimal reconditioning will by-pass the washers. The returned products are reassembled and tested in reconditioning test benches. The refurbished equipment is packaged. Small amounts of paint may be applied by brush and some additional cleaning of the drive shafts maybe conducted. Under normal operating conditions, a maximum 10% of all product returns undergo pre-analysis testing and 100% of all product returns undergo final reconditioning testing. Small quantities of chemicals used for cleaning in this process.

PROJECT DESCRIPTION OWT Industries is proposing to relocate some of its operations at 225 Pumpkintown Highway, Pickens, South Carolina to a new facility in Anderson, South Carolina. With this relocation, several of the emission processes will be relocating and some will be eliminated (i.e., decommissioned). The facility will test and assemble portable power equipment, portable generators and pressure washers. The facility has requested a carbon monoxide limit of less than 250 tons per year for the purpose of PSD avoidance. The Pickens facility will end all operations and shut down as part of the relocation of the new Anderson facility. The existing Pickens operating permit will be surrendered to the Bureau with the start-up of operations at the new Anderson facility.

COLLOCATION DETERMINATION Facility is not co-located with any other facility.

CHANGES SINCE LAST OP ISSUANCE None, first construction permit for new location.

SOURCE TEST REQUIREMENTS No source test required for this project.

SPECIAL CONDITIONS, MONITORING, LIMITS The facility plans to be a major source for Title V purposes for Carbon Monoxide as the PTE for Carbon Monoxide exceeds the 100 tpy threshold.



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Below are the emission units (including exempt sources) and corresponding emissions from all equipment associated with the facility's new location:

UNCONTROLLED POTENTIAL EMISSIONS (PROJECT ONLY)				
ID	Pollutant	lb/hr	TPY	Method for Estimating Emissions
EU01: Assembly and Audit - Pressure Washers & Portable Generators / Fine-Tune Audit Station				
PW/PG - Assembly Lines	PM/PM ₁₀ /PM _{2.5}	0.06	0.28	AP-42 Tables 3.3-1
	SO ₂	0.05	0.23	
	VOC	1.33	5.83	
	NO _x	1.05	4.60	
	CO	46.92	205.49	For worst case used EPA Certified data on similar engine.
PW - Audit Stations - Booths	PM/PM ₁₀ /PM _{2.5}	0.03	0.12	AP-42 Tables 3.3-1
	SO ₂	0.02	0.09	
	VOC	0.55	2.39	
	NO _x	0.60	2.62	
	CO	36.56	160.11	For worst case used EPA Certified data on similar engine.
PW/PG - Audit Stations - Fine Tune	PM/PM ₁₀ /PM _{2.5}	0.002	0.01	AP-42 Tables 3.3-1
	SO ₂	0.001	0.01	
	VOC	0.04	0.16	
	NO _x	0.03	0.13	
	CO	1.46	6.42	For worst case used EPA Certified data on similar engine.
EU02: Reconditioning - Pressure Washers & Portable Generators				
Reconditioning - PW/PG	PM/PM ₁₀ /PM _{2.5}	0.005	0.02	AP-42 Tables 3.3-1
	SO ₂	0.004	0.02	
	VOC	0.10	0.44	
	NO _x	0.10	0.44	based on manufacturer's stack data on similar engine, and a gasoline-oil mixture
	CO	5.70	24.96	
EU03: Reconditioning - Lawn Care				
Pre - analysis	PM/PM ₁₀ /PM _{2.5}	0.01	0.03	AP-42 Tables 3.3-1
	SO ₂	0.01	0.03	
	NO _x	0.02	0.10	
	CO	8.44	37.16	based on manufacturer's stack data on similar engine, and a gasoline-oil mixture.
	VOC	1.26	5.54	
Final Testing	PM/PM ₁₀ /PM _{2.5}	0.01	0.05	AP-42 Tables 3.3-1
	SO ₂	0.01	0.04	
	NO _x	0.04	0.15	
	CO	12.69	55.89	based on manufacturer's stack data on similar engine, and a gasoline-oil mixture.
	VOC	1.90	8.33	
General Chemical Usage				
Fugitive	VOC	1.99	8.68	Mass balance; Engineering calculation
	Glycol Ether	0.16	0.72	
Emergency Generators				
EMGEN-1	PM	0.32	0.08	AP-42 Tables 3.4-1 thru 3.4-4. Annual emissions based on 500 hrs/year.
	PM ₁₀	0.26	0.06	
	PM _{2.5}	0.25	0.06	
	SO ₂	2.29	0.57	
	NO _x	14.51	3.63	
	CO	3.85	0.96	
	VOC	0.37	0.09	
	HAPs	6.86E-03	1.72E-03	



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FP-1	PM/PM ₁₀ /PM _{2.5}	0.50	0.12	AP-42 Tables 3.3-1 and 3.3-2. Annual emissions based on 500 hrs/year.
	SO ₂	0.46	0.12	
	NO _x	7.07	1.77	
	CO	1.52	0.38	
	VOC	0.58	0.14	
	HAPs	0.006	1.59E-03	
Space Heating				
Operations Area	PM/PM ₁₀ /PM _{2.5}	0.09	0.39	10 Natural Gas-fired Space Heaters each rated at 1.20 MMBtu/hr. AP-42 Tables 1-4-1 thru 1.4-4
	SO ₂	0.01	0.03	
	NO _x	1.17	5.10	
	CO	0.98	4.29	
	VOC	0.06	0.28	
	HAPs	0.02	0.10	
Distribution Area	PM/PM ₁₀ /PM _{2.5}	0.03	0.13	16 Natural Gas-fired Space Heaters each rated at 0.25 MMBtu/hr. AP-42 Tables 1-4-1 thru 1.4-4
	SO ₂	0.002	0.01	
	NO _x	0.39	1.70	
	CO	0.33	1.43	
	VOC	0.02	0.09	
	HAPs	0.01	0.03	
Office Area	PM/PM ₁₀ /PM _{2.5}	0.014	0.06	19 Natural Gas-fired Space Heaters each rated at 0.10 MMBtu/hr. AP-42 Tables 1-4-1 thru 1.4-4
	SO ₂	0.001	0.005	
	NO _x	0.184	0.81	
	CO	0.155	0.68	
	VOC	0.010	0.04	
	HAPs	0.005	0.02	
Maintenance Shop Table Saw	PM/ PM ₁₀	0.05	0.2	Material balance; Engineering calculation
500-gal Storage Tank - Gasoline	VOC	0.04	0.18	TANKS4.0.9d
	Hexane	1.9E-04	8.2E-04	
	Benzene	2.1E-04	9.0E-04	
	Toluene	2.3E-04	9.9E-04	
	Ethylbenzene	1.5E-05	6.5E-05	
	Xylene	6.3E-05	2.8E-04	
	Isopropylbenzene	2.3E-06	1.0E-05	
250-gal Storage Tank - Diesel	VOC	3.3E-05	1.5E-04	

Example PTE Calculations for EU01 Assembly Lines:

Emission Factors						
	Engine #1	Engine #2	Engine #3	Engine #4	Engine #5	Engine #6
Horsepower (hp)	4.4	5.1	5.7	7	11	13.3
Kilowatt (kW) ^(A)	3.28	3.80	4.25	5.22	8.21	9.92
Pollutant	Emission Factors ^(B) (g/kW-hr)					
PM/PM ₁₀ /PM _{2.5}	0.44	0.44	0.44	0.44	0.44	0.44
SO _x	0.36	0.36	0.36	0.36	0.36	0.36
NO _x	9.9	9.9	10	10	7.8	7.2
CO	334	334	610	610	389	319
VOCs	9.121	9.121	9.121	9.121	9.121	9.121



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Emission in (lb/hr) - Pressure Washers							
Pollutant	Emission rates ^{(C) (D)}						Worst case
	lb/hr						(lb/hr)
PM/PM ₁₀ /PM _{2.5}	0.003	0.004	0.004	0.005	--	--	0.005
SO _x	0.003	0.003	0.003	0.004	--	--	0.004
NO _x	0.072	0.083	0.094	0.115	--	--	0.115
CO	2.417	2.801	5.718	7.023	--	--	7.023
VOCs	0.066	0.077	0.086	0.105	--	--	0.105

Emission Factor in (lb/hr) - Portable Generators							
Pollutant	Emission rates ^{(C) (D)}						Worst case
	lb/hr						(lb/hr)
PM/PM ₁₀ /PM _{2.5}	--	0.004	--	--	0.008	0.010	0.010
SO _x	--	0.003	--	--	0.007	0.008	0.008
NO _x	--	0.083	--	--	0.141	0.157	0.157
CO	--	2.801	--	--	7.037	6.978	7.037
VOCs	--	0.077	--	--	0.165	0.200	0.200

Emissions from 8 Stations							
Product Type	Pollutant	Worst-Case Emission Rate (lb/hr per unit)	PTE Annual Quantity Tested	PTE Run Time Per Unit (min/unit)	PTE Run Time Annual Total (hr/yr)	PTE Emissions	
						(lb/hr)	(ton/yr)
Pressure washers	PM/PM ₁₀ /PM _{2.5}	0.005	1051200	3	52560	0.03	0.13
	SO _x	0.004				0.02	0.11
	NO _x	0.115				0.69	3.03
	CO	7.023				42.14	184.56
	VOCs	0.105				0.63	2.76
Portable generators	PM/PM ₁₀ /PM _{2.5}	0.010	790800	5	58400	0.06	0.28
	SO _x	0.008				0.05	0.23
	NO _x	0.157				1.05	4.60
	CO	7.037				46.92	205.49
	VOCs	0.200				1.33	5.83

(A) - Conversion: 1 hp = 0.746 kW

(B) - Emission Factors for PM/PM₁₀/PM_{2.5}, SO₂ and VOCs are from USEPA AP-42 Table 3.3-1.

- Emission Factors for NO_x and CO are based on EPA Certified data on similar engine. Emission factors are for gasoline use.

(C) - Emission Factors are calculated only for the engine sizes applicable to the Product Type.

(D) - Equation: Emission Rate (lb/hr) = Emission Factor (g/kW-hr) x Engine Size (kW) x 1 hour x (lb / 453.6 g)

Worst case based on running generators on the 8 Assembly Lines.	Pollutant	Worst case PTE Emissions for 8 Assembly Lines		
		(lb/year)	(lb/hr)	(ton/year)
	PM/PM ₁₀ /PM _{2.5}	559.98	0.06	0.28
	SO _x	459.02	0.05	0.23
	NO _x	9197.50	1.05	4.60
	CO	410987.04	46.92	205.49
	VOCs	11651.45	1.33	5.83



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EMISSIONS

FACILITY WIDE EMISSIONS		
Pollutant	Uncontrolled Emissions	Controlled/Limited Emissions
	TPY	TPY
PM	1.49	No control
PM ₁₀	1.48	No control
PM _{2.5}	1.27	No control
SO ₂	1.15	No control
NO _x	21.06	No control
CO	497.76	< 250
VOC	32.20	No control
Total HAPs	0.87	No control

OPERATING PERMIT STATUS This is the first construction permit for the facility's new location. The facility plans to submit a Title V application 12 months after start-up of this project.

REGULATORY APPLICABILITY REVIEW

Regulation	Comments/Periodic Monitoring Requirements
Section II.E - Synthetic Minor	The facility's PTE for Carbon monoxide (CO) exceeds major source levels. The facility plans to limit Carbon monoxide of less than 250 tons per year to avoid PSD permitting.
Standard No. 1	The small engines/generators do not meet the definition of indirect fuel burning operations as noted in SC Regulation 61-62.1 Section I (30).
Standard No. 3 (state only)	This process does not contain waste combustion or reduction sources.
Standard No. 4	This project will have a 20% opacity limit and no particulate matter process emissions. Unleaded Gasoline or Unleaded Gasoline oil mixture used for engine testing is the sole source of fuel for the engines and therefore is exempt from the process PM limit based on process weight rate definition "The Process Weight Rate definition excludes liquids and gases that are used solely as fuels".
Standard No. 5	The facility is not an existing process described under one of the parts of Section II of Standard 5, since the facility did not commence operation before July 1, 1979.
Standard No. 5.2	The engine sizes which will be tested in EU01 (PW/PG), EU02 (PW/PG), and EU03 (LC), each meet the exemption criteria of Section I(B)(3) and the emergency generators are exempt from this rule, as specified by Section I(b)(2).
Standard No. 7	The facility is requesting a facility wide limit on carbon monoxide of less than 250 tons per year to avoid PSD permitting.
61-62.6	The facility shall minimize fugitive dust by utilizing work practices.
40 CFR 60 and 61-62.60	40 CFR 60 Subpart IIII Standards Of Performance For Stationary Compression Ignition Internal Combustion Engines: Will apply to the new emergency diesel fire pump and emergency diesel generator. Facility will comply by purchasing engines certified by manufacturer.
40 CFR 61 and 61-62.61	The project is not subject to any Part 61 requirements
40 CFR 63 and 61-62.63	40 CFR Part 63, Subpart ZZZZ (area source): Per 40 CFR 63.6590(c) (1), The two new stationary RICE engines must meet the requirements of Part 63 by meeting the requirements of 40 CFR part 60 subpart IIII, for compression ignition engines. No further requirements apply for such engines under part 63. This facility is not a major source for HAP emissions; therefore, not subject to Subpart P----- National Emission Standards for Hazardous Air Pollutants for Engine Test Cells/Stands.
61-62.68	The proposed facility does not plan to use or store chemicals subject to 112(r) above the threshold quantities.
40 CFR 64	The assembly and audit process (EU01) will exceed Title V thresholds for CO. There are no add on



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Regulation	Comments/Periodic Monitoring Requirements
	controls therefore this regulation will not apply.

AMBIENT AIR STANDARDS REVIEW

Regulation	Comments/Periodic Monitoring Requirements
Standard No. 2	This facility has demonstrated compliance with this Standard 2 by submitting weight of evidence justification. See modeling summary dated August 27, 2015.
Standard No. 7.c	This facility will be located in Anderson County. PSD minor source baselines for PM ₁₀ , SO ₂ and NO ₂ were established for this county in 1999. This facility has demonstrated compliance with this by submitting weight of evidence justification. See modeling summary dated August 27, 2015.
Standard No. 8 (state only)	This facility has demonstrated compliance for all TAPs. See modeling summary dated August 27, 2015.

PUBLIC NOTICE This construction permit will undergo a 30-day public notice period to establish synthetic minor limits in accordance with SC Regulation 61-62.1, Section II(N). This permit was placed on the SC DHEC Public Notice website on September 9, 2015. The comment period was open from September 9, 2015 to October 8, 2015.

ADDITIONAL PUBLIC PARTICIPATION N/A

SUMMARY AND CONCLUSIONS

It has been determined that this source, if operated in accordance with the submitted application, will meet all applicable requirements and emission standards.